

WHAT IS CLAIMED IS:

1. An electronic device comprising a semiconductor  
chip which is fixed to the mounting face of a wiring  
5 board through adhesive and in which external terminals  
are electrically connected with electrode pads of said  
wiring board through bump electrodes,

wherein recesses are formed in said electrode  
pads and in said recesses said electrode pads and said  
10 bump electrodes are connected.

2. An electronic device according to claim 1,  
wherein said electrode pads are formed over the  
surface of a soft layer, and

15 wherein said recesses are formed by elastic  
deformation of said electrode pads and said soft  
layer.

3. An electronic device according to claim 2,  
20 wherein said soft layer is formed over the  
surface of a rigid board.

4. An electronic device according to claim 2,  
wherein said soft layer is made of a material  
25 having a smaller coefficient of thermal expansion than

that of said adhesive.

5. An electronic device according to claim 1,  
wherein said bump electrodes are fixed to the  
5 external terminals of said semiconductor chip and  
pressed to the electrode pads of said wiring board.

6. An electronic device according to claim 1,  
wherein said bump electrodes are constructed to  
10 have a stud bump structure.

7. An electronic device according to claim 1,  
wherein said adhesive is made of an anisotropic  
conductive resin film.  
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8. A data processor comprising an electronic device  
according to any of the claims 1 to 7 and assembled  
therein.

20 9. A process for mounting a semiconductor device  
comprising a semiconductor chip which is fixed to the  
mounting face of a wiring board through adhesive and  
in which external terminals are electrically connected  
with electrode pads of said wiring board through bump  
25 electrodes, comprising:

the step of preparing a wiring board having electrode pads over a rigid board through a soft layer, and a semiconductor chip having bump electrodes formed over external terminals;

5 the step of arranging said semiconductor chip over the mounting face of said wiring board through adhesive and the bump electrodes of said semiconductor chip over the electrode pads of said wiring board; and

10 the step of forming recesses in said electrode pads by depressing the bump electrodes of said semiconductor chip thereby to cure said adhesive in this state.

10. A process for manufacturing a semiconductor device, comprising:

15 a) the step of preparing a semiconductor chip having a plurality of semiconductor elements and a plurality of bonding pads over a major face, and bump electrodes over the individual surfaces of said bonding pads;

20 b) the step of preparing a wiring board having a plurality of first wirings, and a mounting board including an insulating film having a lower modulus of elasticity than that of said wiring board and a plurality of second wirings formed over said  
25 insulating layer;

c) the step of mounting said semiconductor chip over said mounting board in such a way that said bump electrodes are arranged over the second wirings of said mounting board; and

5 d) the step of joining the major face of said semiconductor chip to said mounting board through adhesive interposed therebetween.

11. An electronic device manufacturing process  
10 according to claim 10,  
wherein said bump electrodes are gold bumps.

12. An electronic device manufacturing process  
according to claim 10,  
15 wherein said wiring board is made by impregnating glass fibers with resin, and  
wherein said insulating layer is made of resin.

13. An electronic device manufacturing process  
20 according to claim 10,  
wherein said adhesive contains conductive particles in an insulating resin, and  
wherein said bump electrodes and said second  
wirings are electrically connected through said  
25 conductive particles.